

Serial No.: 09/864,389

Docket No. 4303-4003US3(4005)

b. a second loop containing section, said second loop containing section arranged generally in the circumferential direction, the loops in said second loop containing section also occurring at said first frequency;

c. at least one of said first and second loop containing sections formed of a single, continuous, generally sinusoidal pattern; and

d. a third loop containing section, said third loop containing section arranged generally in the circumferential direction, the loops in said third loop containing section occurring at a second frequency that is higher than said first frequency, disposed in the generally circumferential space between said first and second loop containing sections and alternately joined to said first and second loop containing sections, said first, second and third loop containing sections forming a plurality of cells and alternating sinusoidal patterns, and said first and second loop containing sections being joined together through said third loop containing section without connection directly between said first and second loop containing sections;

e. the loops in said first, second and third loop containing sections being disposed and adapted to cooperate so that, components of said third loop containing section contribute to the cell's elongating or shortening when the stent is flexed in a vessel.

6. (Twice Amended) A uniformly flexible stent for widening a vessel in the human body comprising:

a. a plurality of first circumferential bands, each containing a single, continuous, generally sinusoidal pattern of loops at a first frequency;

Serial No.: 09/864,389

Docket No. 4303-4003US3(4005)

C2

b. a plurality of second circumferential bands, each containing a pattern of loops at a second frequency higher than said first frequency, alternating with said first circumferential bands and periodically coupled to said first bands to form cells, said first circumferential bands being joined together through said second circumferential bands without direct connection of any first circumferential bands to another first circumferential band;

c. patterns of loops in said bands being disposed and adapted to cooperate so that the higher frequency band components contribute more than lower frequency bands to deformation during flexing of the stent.

11. (Amended) A stent for holding open a blood vessel consisting essentially of a plurality of triangular cells, each triangular cell comprising:

a. a first loop containing section, the first loop containing section arranged generally in the circumferential direction;

C3

b. a second loop containing section joined to the first loop containing section at a first junction point; and

c. a third loop containing section joined to the first loop containing section at a second junction point and joined to the second loop containing section at a third junction point, the first and second loop containing sections forming a first single sinusoidal pattern and the third loop containing section forming a second single sinusoidal pattern, said first and second sinusoidal patterns alternating circumferentially along the longitudinal axis of the stent;

Serial No.: 09/864,389

Docket No. 4303-4003US3(4005)

C³

d. wherein loops in said cells are disposed and adapted to cooperate so that, when the expanded stent is in a curved vessel, cells on the outside of the curve open in length, but narrow circumferentially whereas cells on the inside of the curve shorten in length but widen circumferentially.

16. (Amended) A stent for widening a vessel in the human body comprising:

C⁴

a. a plurality of first meander patterns, said first meanders comprising alternating odd and even first meander patterns, said odd and even first meander patterns being out of phase;

b. a plurality of second meander patterns intertwined with the first meander patterns to form triangular cells, said triangular cells forming a uniform mesh consisting essentially of said cells along the stent, said first meander patterns and said second meander patterns disposed and adapted to cooperate so that after expansion of said stent, when said stent is disposed in a curved vessel, cells on the outside of the curve open in length, but narrow circumferentially whereas cells on the inside of the curve shorten in length but widen circumferentially.

C⁵

21. (Amended) A multicellular stent for holding open a lumen, comprising:

a. a plurality of even and odd vertical meander patterns, the odd vertical meander patterns being located between every two even vertical meander patterns and being out of phase with the even vertical meander patterns, said even and odd vertical meander patterns each consisting of a single continuous, generally sinusoidal element;

Serial No.: 09/864,389

Docket No. 4303-4003US3(4005)

- C5
- b a plurality of even and odd horizontal meander patterns, the odd horizontal meander patterns being located between every two even horizontal meander patterns,
 - c the vertical meander patterns being intertwined with the horizontal meander patterns to form a plurality of triangular cells;
 - d said horizontal meander patterns and said vertical meander patterns being disposed and adapted to cooperate so that after expansion of said stent within a curved lumen, cells on the outside of the curve open in length, but narrow circumferentially whereas cells on the inside of the curve shorten in length but widen circumferentially.
-

26.(Amended) An expandable stent comprising a plurality of enclosed flexible spaces, each of the plurality of enclosed flexible spaces including:

- C6
- a) a first member having a first end and a second end;
 - b) a second member having a first end and a second end;
 - c) a third member having a first end and a second end;
 - d) a fourth member having a first end and a second end; the first end of the first member communicating with the first end of the second member, the second end of the second member communicating with the second end of the third member, and the first end of the third member communicating with the first end of the fourth member;
 - e) the first member and the second member with the curved portion at their ends forming a first loop;
 - f) the third member and the fourth member with the curved portion at their ends forming a second loop;

Serial No.: 09/864,389

Docket No. 4303-4003US3(4005)

- CL
- g) a fifth member having a first end and a second end;
 - h) a sixth member having a first end and a second end;
 - i) a seventh member having a first end and a second end;
 - j) an eighth member having a first end and a second end;
 - k) a ninth member having a first end and a second end; and
 - l) a tenth member having a first end and a second end, the first end of the fifth member communicating with the second end of the first member, the second end of the fifth member communicating with the second end of the sixth member, the first end of the sixth member communicating with the first end of the seventh member, the second end of the seventh member communicating with the second end of the eighth member, the first end of the eighth member communicating with the first end of the ninth member, the second end of the ninth member communicating with the second end of the tenth member, and the first end of the tenth member communicating with the second end of the fourth member;
 - m) the fifth member and the sixth member with the curved portion at their ends forming a third loop;
 - n) the seventh member and the eighth member with the curved portion at their ends forming a fourth loop; and
 - o) the ninth member and the tenth member with the curved portion at their ends forming a fifth loop, wherein the first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, and tenth members form a uniform mesh of flexible cells; and

when the expanded stent is in a curved lumen, cells on the outside of the curve at communication points of the first and fifth and fourth and tenth members increase in length and at each of the

Serial No.: 09/864,389

Docket No. 4303-4003US3(4005)

C4
first through fifth loops, the adjoining members come closer to each other, to cause the cell to narrow circumferentially to compensate for the increase in length, whereas cells on the outside of the curve at communication points of the first and fifth and fourth and tenth members decrease in length and at each of the first through fifth loops, the adjoining members move apart, to cause the cell to become wider circumferentially and compensate for the decrease in length.

Please add the following new claims:

45. (new) The stent according to claim 1, wherein said first loop containing section is formed of a single continuous, generally sinusoidal pattern.

46. (new) The stent according to claim 1, wherein said second loop containing section is formed of a single continuous, generally sinusoidal pattern.

47. (new) The stent according to claim 1, wherein each of said first loop containing sections and second loop containing sections are formed of a single continuous, generally sinusoidal pattern.

C7
48. (new) A stent for widening a vessel in the human body comprising:

a. even first meander patterns having axes extending in a circumferential direction;

b. odd first meander patterns having axes extending in said circumferential direction, wherein the odd first meander patterns are 180° out of phase with the even first meander patterns, the even first meander patterns and the odd first meander patterns alternating with and spaced from each other;

Serial No.: 09/864,389

Docket No. 4303-4003US3(4005)

c. second meander patterns having axes extending in a longitudinal direction, the second meander patterns being interconnected with the first meander patterns to form a uniformly flexible structure;

d. the first and second meander patterns having loop portions; and

e. the even and odd first meander patterns being interconnected to leave a loop of the second meander pattern in the space between each even and odd first meander pattern.

49. (new) A uniformly flexible stent for holding open a blood vessel

c 7 comprising:

a. a first loop containing section, said first loop containing section arranged generally in a circumferential direction, the loops in said first loop containing section occurring at a first frequency;

b. a second loop containing section, said second loop containing section arranged generally in the circumferential direction, the loops in said second loop containing section also occurring at said first frequency, said second loop containing section being out of phase with said first loop containing section;

c. at least one of said first and second loop containing sections formed of a single, continuous, generally sinusoidal pattern; and

d. a third loop containing section, said third loop containing section arranged generally in the circumferential direction, the loops in said third loop containing section